LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A frequency correction method for keeping a frequency of a controllable oscillator within a proper range, the frequency correction method comprising:

a first step of recording past control information for said oscillator;

a second step of calculating a secular change of the frequency of said oscillator from the past control information; and

a third step of giving to said oscillator new control information for correcting the calculated secular change wherein the past control information is recorded when a temperature of the oscillator is stationary.

2. (Original) The frequency correction method according to claim 1, wherein, in the second step, the secular change is calculated by using an approximate value obtained from an average of pieces of the past control information.

3. (Original) The frequency correction method according to claim 1, wherein:

in the first step, a temperature at a time at which the past control information is decided is recorded in the first step in correspondence to the past control information; and

in the second step, the secular change of the frequency of said oscillator is calculated from the past control information and the temperature.

4. (Original) The frequency correction method according to claim 3, wherein, in the second step, a relational expression of the past control information for the temperature placed within a predetermined range is decided according to approximation using discrete data both of the past control information and the temperature, and the secular change is calculated by using an approximate value which is obtained from said relational expression by setting a predetermined temperature of within a predetermined range as a reference.

5. (Original) The frequency correction method according to claim 2, wherein a difference between an ideal value predetermined on condition that the secular change does not exist and the approximate value is set as the secular change.

6. (Original) The frequency correction method according to claim 1, wherein, in the third step, the new control information for correcting the calculated secular change being integrated with an error between the frequency of said oscillator and a target frequency is given to said oscillator.

7. (Original) The frequency correction method according to claim 1, wherein, in the first step, the past control information is recorded every predetermined time.

8. (Canceled)

9. (Currently Amended) The frequency correction method according to claim [[8]] 1, wherein it is judged that the temperature of said oscillator is stationary when a change in a temperature periodically observed by a temperature sensor is smaller than a predetermined threshold, and the past control information is recorded.

10. (Original) The frequency correction method according to claim 1, wherein the past control information is recorded just after an operation of said oscillator is started from a state in which the operation of said oscillator is stopped for a predetermined time or above.

11. (Original) The frequency correction method according to claim 1, wherein the past control information is recorded when an operation of a circuit, which elevates a temperature of said oscillator to a high temperature by generating heat during the operation, is continuously stopped for a predetermined time or above.

12. (Original) The frequency correction method according to claim 1, wherein the past control information is recorded when a circuit, which elevates a temperature of the oscillator to a high temperature by generating heat during an operation, is continuously operated for a predetermined time or above.

13. (Original) The frequency correction method according to claim 1, wherein, in the first step, a time at which the past control information is recorded is recorded in the first step in correspondence to said past control information, and

the frequency correction method further comprises a fourth step of deleting said past control information when a predetermined time has elapsed after said past control information is recorded in the first step.

14. (Original) The frequency correction method according to claim 13, wherein, in the fourth step, the new control information is recorded in place of said past control information when said past control information is deleted.

15. (Original) The frequency correction method according to claim 1, wherein, in the first step, control information to be newly recorded is overwritten on one piece of the oldest past control information after the number of pieces of the past control information recorded reaches a predetermined number.

16. (Currently Amended) A frequency correction apparatus for keeping a frequency of a controllable oscillator within a proper range, the frequency correction apparatus comprising:

storing means for recording past control information for said oscillator; and

processing means for calculating a secular change of the frequency of said oscillator from the past control information recorded in said storing means and giving to said oscillator new control information for correcting the calculated secular change wherein the storing means records the past control information when a temperature of the oscillator is stationary.

17. (Original) The frequency correction apparatus according to claim 16, wherein said processing means calculates the secular change by using an approximate value obtained from an average of pieces of the past control information.

18. (Original) The frequency correction apparatus according to claim 16, wherein said storing means records a temperature at a time, at which the past control information is decided, in correspondence to said past control information, and said processing means calculates the secular change of the frequency of said oscillator from the past control information and the temperature.

19. (Original) The frequency correction apparatus according to claim 18, wherein said processing means decides a relational expression of the past control information for the temperature placed within a predetermined range according to approximation using discrete data both of the past control information and the temperature and calculates the secular change by using an approximate value which is obtained from said relational expression by setting a predetermined temperature within a predetermined range as a reference.

20. (Original) The frequency correction apparatus according to claim 17, wherein a difference between an ideal value predetermined on condition that the secular change does not exist and the approximate value is set as the secular change.

21. (Original) The frequency correction apparatus according to claim 16, further comprising:

frequency error detecting means for detecting an error between the frequency of said oscillator and a target frequency; and

integrating means for integrating a correction of the error detected by said frequency error detecting means with the new control information for correcting the secular change calculated by said processing means.

22. (Original) The frequency correction apparatus according to claim 16, wherein said storing means records the past control information every predetermined time.

23. (Canceled)

24. (Currently Amended) The frequency correction apparatus according to claim [[23]]16, further comprising:

a temperature sensor for measuring the temperature of said oscillator,

wherein it is judged that the temperature of said oscillator is stationary when a change in the temperature periodically observed by said temperature sensor is smaller than a predetermined threshold, and said storing means records the past control information.

25. (Original) The frequency correction apparatus according to claim 16, wherein said storing means records the past control information just after an operation of said oscillator is started from a state in which the operation of said oscillator is stopped for a predetermined time or above.

26. (Original) The frequency correction apparatus according to claim 16, further comprising a circuit for elevating a temperature of said oscillator to a high temperature by generating heat during an operation,

wherein said storing means records the past control information when the operation of said circuit is continuously stopped for a predetermined time or above.

27. (Original) The frequency correction apparatus according to claim 16, further comprising a circuit for elevating a temperature of said oscillator to a high temperature by generating heat during an operation,

wherein said storing means records the past control information when said circuit is continuously operated for a predetermined time or above.

28. (Original) The frequency correction apparatus according to claims 16, wherein said storing means records a time, at which the past control information is recorded, in correspondence to said past control information and deletes said past control information when a predetermined time has elapsed after recording of said past control information.

29. (Original) The frequency correction apparatus according to claim 28, wherein said storing means records the new control information in place of said past control information when said past control information is deleted.

30. (Original) The frequency correction apparatus according to claim 16, wherein said storing means overwrites control information to be newly recorded on one piece of the oldest past control information after the number of pieces of the past control information recorded reaches a predetermined number.

31. (Currently Amended) A mobile terminal, comprising:

receiving means for receiving an electric wave from a base station;

local signal generating means for supplying an oscillating local signal to said receiving means;

a reference oscillator for generating a reference signal of a frequency which is a reference for generating the local signal in said local signal generating means;

de-modulating means for de-modulating a desired received signal from the electric wave received by said receiving means;

frequency error detecting means for detecting a frequency error of said reference oscillator on a basis of the received signal de-modulated by said de-modulating means;

summing means for summing frequency errors detected one after another by said frequency error detecting means and produces fundamental control information for correcting the frequency error;

storing means for recording past control information for the reference oscillator;

processing means for calculating a secular change of a frequency of said reference oscillator from the past control information; and

integrating means for integrating the fundamental control information produced by said summing means and the secular change calculated by said processing means, and gives to said reference oscillator new control information for correcting the frequency of said reference oscillator wherein the storing means records the past control information when a temperature of the reference oscillator is stationary.

32. (Original) The mobile terminal according to claim 31, wherein said processing means calculates the secular change by using an approximate value obtained from an average of pieces of the past control information.

33. (Original) The mobile terminal according to claim 31, wherein said storing means records a temperature at a time, at which the past control information is decided, in correspondence with said past control information, and said processing means calculates the secular change of the frequency of said reference oscillator from the past control information and the temperature.

34. (Original) The mobile terminal according to claim 33, wherein said processing means decides a relational expression of the past control information for the temperature placed within a predetermined range according to approximation using discrete data both of the past control information and the temperature and calculates the secular change by using an approximate value which is obtained from said relational expression by setting a predetermined temperature within a predetermined range as a reference.

35. (Original) The mobile terminal according to claim 32, wherein said processing means sets a difference between an ideal value predetermined on condition that the secular change does not exist and the approximate value as the secular change.

36. (Original) The mobile terminal according to claim 31, wherein said storing means records the past control information every predetermined time.

37. (Canceled).

38. (Currently Amended) The mobile terminal according to claim [[37]]31, further comprising a temperature sensor for measuring the temperature of said reference oscillator,

wherein the temperature of said reference oscillator is stationary when a change in the temperature periodically observed by said temperature sensor is smaller than a predetermined threshold, and said storing means records the past control information.

39. (Original) The mobile terminal according to claim 31, wherein said storing means records the past control information just after a power off state set for a predetermined time or above is changed to a power on state.

40. (Original) The mobile terminal according to claim 31, further comprising a transmitting circuit for generating heat during transmission of the electric wave and elevating a temperature of the reference oscillator to a high temperature,

wherein said storing means records the past control information when the transmitting circuit does not transmit an electric wave for a predetermined time or above.

41. (Original) The mobile terminal according to claim 31, further comprising a transmitting circuit for generating heat during transmission of the electric wave and elevating a temperature of the reference oscillator to a high temperature,

wherein said storing means records the past control information when said transmitting circuit continuously transmits an electric wave for a predetermined time or above.

42. (Original) The mobile terminal according to claims 31, wherein said storing means records a time, at which the past control information is recorded, in correspondence to said

past control information and deletes said past control information when a predetermined time has elapsed after recording of said past control information.

43. (Original) The mobile terminal according to claim 42, wherein said storing means records the new control information in place of said past control information when said past control information is deleted.

44. (Original) The mobile terminal according to claim 31, wherein said storing means overwrites control information to be newly recorded on one piece of the oldest past control information after the number of pieces of the past control information recorded reaches a predetermined number.